REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

1. Amendments and Support for Same

By the Response, claim 1 has been amended to more particularly point out and distinctly claim the subject matter of the invention. Support for the amended features in claim 1 can be found in, e.g., page 5, lines 9 – 17 and page 8, line 27 to page 9, line 13, as well as in claim 3, in the original specification. Claim 3 has been cancelled. Claim 4 has been amended to change its dependency from claim 3 to claim 1. Claims 1, 5, 9 and 10 have been amended to correct minor informalities in response to the 35 U.S.C. §112, 2nd paragraph, set forth in the Office Action. No new matter has been added. Accordingly, claims 1-2 and 4-11 are respectfully submitted for consideration. Approval and entry of the amendments are respectfully requested.

2. Claim rejections under 35 U.S.C. §112, 2nd paragraph

With respect to the rejection of claims 1-11 under 35 U.S.C. §112, 2nd paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention, Applicant has amended claims 1, 5, 9 and 10, as shown above, to correct all informalities noted by the Examiner. In view of the amendments and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of the §112, 2nd paragraph, rejections of claims 1-11.

3. Rejections under 35 U.S.C. §103(a)

With respect to the rejection of claims 1-2, 5 and 7-11 under 35 U.S.C. §103(a) as being unpatentable over Wikswo (US 5,408,178) in view of Avrin (US 2002-0151779), to the rejection of claims 3-6 under 35 U.S.C. §103(a) as being unpatentable over Wikswo and Avrin in view of Wilson (S 7,062,391), Applicant respectfully traverses the rejection at least for the reason that Wikswo, Avrin and

Wilson, combined or separately, fail to teach, disclose, or suggest all of the limitation recited in the rejected claims.

Amended claim 1 recites, among other things, the features of determining the movement of the measuring instrument and the measurement object with respect to one another based on the signals measured using the measuring instrument, modelling the movement of the measurement object as a movement of the measuring instrument around the measurement object, presenting the signal registered as elementary fields in a signal space basis whose basis vector coefficients have been attached to the co-ordinates of the measurement object based on the known geometry between the measurement object and the measuring instrument, whereby the signal produced by a static source is detected as a static signal, and separating the aforementioned static signal from the signal measured. Applicant respectfully asserts that Wikswo, Avrin and Wilson, combined or separately, fail to disclose or suggest the amended features in claim 1.

Wikswo generally describes a method for measuring perturbations to a magnetic field applied to an object to be measured. The system of Wikswo comprises a Helmholtz coil pair, an array of pick-up coils connected to Superconducting Quantum Interference Device (SQUID) magnetometers and a computer system. A magnetic field of know strength and orientation is applied to an object to be measured. The orientation of the object or the measuring array is altered with respect to one another to produce a plurality of perturbation signals. The perturbation signals detected at the measuring array are processed to obtain a map of local susceptibilities at selected sites of the object. However, in contrast with Applicant's invention, Wikswo fails to teach, disclose or suggest that the movement of the measuring instrument and the measuring object are determined with respect to one another based on signals measured using the measuring instrument.

In Wikswo, the method does not involve a determination of the movement of the object to be measured and the measuring array in relation to one another. Further, in Wikswo, the object and the measuring array are moved in relation to one another in the embodiments where the magnetic field is not moved with respect thereto.

Moreover, in Wikswo, a free movement of the object and the measuring array is not possible. The movement is only performed to generate a regular array of

perturbation signals. The regular array is required in order to provide a meaningful map of the local susceptibilities on the object.

Further, Applicant respectfully asserts that Wikswo fails to teach, disclose or suggest the modelling of the movement of the measurement object as a movement of the measuring instrument around the measurement object. In Wikswo there is no modelling of the movement of the measurement object as a movement of the measuring instrument.

Wikswo applies an inverse Fourier transform to an array of measurements to obtain an image of the magnetization distribution in the object, which is used to obtain the desired susceptibility image, as described in column 8, lines 63 to column 9, line 7 of Wikswo. However, Wikswo fails to teach, disclose or suggest a specific step where a determined free movement of the object in relation to the measurement array is eliminated to enable a computation of spatial Fourier transform.

Further, Applicant respectfully asserts that Wikswo teaches against Applicant's claimed invention in the sense that Wikswo computes a spatial transform of the Green's function without any extra parameters that would represent irregular free movement of the object in relation to the measurement array and, thus, a possible irregular spacing of the voxels measured. Applicant respectfully submits that, in Wikswo, no such irregularities are taken into account in the equations disclosed.

Further, Wikswo fails to disclose the presenting of the signal registered as elementary fields in a signal space basis whose basis vector coefficients have been attached to the co-ordinates of the measurement object based on the known geometry between the measurement object and the measuring instrument, whereby the signal produced by a static source is detected as a static signal.

With respect to Avrin, the reference generally describes a method and system for minimizing effects of temperature drift in a magnetic susceptibility measurement instrument. Avrin discloses a coil system where a field generating element and a magnetic sensor are arranged such that the signal due to the applied field is cancelled out. However, Avrin fails to teach, disclose or suggest separating the aforementioned static signal from the measurement signal measured in the context of a computation involving the modelling the movement of the measurement object as a movement of the measuring instrument around the measurement object.

In Avrin the separation is merely based on a cancellation of the field by positioning of the coils applying the field to the measurement sensors, and Avrin is completely silent regarding modelling. Hence, as Avrin fails to teach, disclose or suggest the features that are deficient in Wikswo, the combination of Wikswo and Arvin still fails to arrive at Applicant's claimed invention as recited in amended claim 1.

With respect to Wilson, the reference generally describes a method for magnetic imaging of an object. Wilson's method comprises monitoring a magnetic field of sources in the object at a plurality of magnetic detectors to obtain a corresponding plurality of sensor outputs, monitoring a position of the object while monitoring the magnetic field of the sources, modelling the magnetic field of the sources in the object as a gradient of a scalar potential, the scalar potential comprising a sum of spherical harmonic functions each multiplied by a corresponding coefficient, and, compensating for the position of the object by applying a transformation to the plurality of sensor outputs, the transformation including, at least in part, a spherical harmonic translation transformation. However, Wilson fails to teach, disclose or suggest the feature of detecting the signal produced by a static source as a static signal, and separating the static signal from the signal measured.

Further, Wilson fails to disclose modelling of a static signal and its separation from a dynamic part of the signal, as well as presenting the signal registered as elementary fields in a signal space basis whose basis vector coefficients have been attached to the co-ordinates of the measurement object based on the known geometry between the measurement object and the measuring instrument, in order to detect the signal produced by a static source as a static signal.

Still further, Wilson fails to disclose that as a result of a motion monitoring and a motion correction, a perceived signal produced by a DC current appears in the basis vector coefficients as a static signal because in the co-ordinates of the head, the DC currents produce a static signal.

Due to the aforementioned differences in Wikswo, Avrin and Wilson, a person skilled in the art would not be motivated to combine their respective teachings to arrive at Applicant's invention as recited in the amended independent claim 1.

In view of the amendment and arguments set forth above, Applicant respectfully requests reconsideration and withdrawal of the §103(a) rejection of claim 1 and its dependent claims 2-11.

4. Conclusion

In view of the amendments to the claims, and in further view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 1-2 and 4-11 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's representative, the Examiner is invited to contact the undersigned at the numbers shown.

Further, while no fees are believed to be due, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-4525.

Respectfully submitted,

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